

L27 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2008:90980 CAPLUS  
 TI Electrolytes for achieving maximum theoretical operational voltage window  
 of electrolytic capacitors  
 IN Atkin, Howard Stuart; Nickson, Ian David  
 PA ADD Power Technologies Limited, UK  
 SO PCT Int. Appl., 98pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2008009975	A2	20080124	WO 2007-GB2796	20070723
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,				
	CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI,				
	GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG,				
	KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,				
	MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL,				
	PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,				
	TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW:				
	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				
	IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF,				
	BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW,				
	GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,				
	BY, KG, KZ, MD, RU, TJ, TM				

PRAI GB 2006-14486 A 20060721

AB An electrolyte is claimed or achieving maximum theor. operational voltage window for use in a capacitor. The electrolyte comprising a solvent; a salt comprising a 1st anion and a 1st cation; and an additive. The additive is provided in a sufficient quantity to modify a voltage differential across an elec. double layer associated with at least one electrode of said capacitor such that said voltage differential is closer to a predetd. voltage breakdown limit for the electrolyte and said at least one electrode than a voltage differential across an elec. double layer associated with said at least one electrode and a further electrolyte comprising said solvent and said salt but no additive. A capacitor comprising 1st and 2nd electrodes and the aforementioned electrolyte. Methods for optimizing an electrolyte for use in a capacitor and manufacturing optimized capacitor systems are also presented.

IT 834861-86-8  
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (electrolytes for achieving maximum theor. operational voltage window of electrolytic capacitors)

RN 834861-86-8 CAPLUS

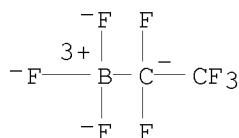
CN Pyrrolidinium, 1-butyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 390750-62-6

CMF C2 B F8

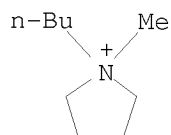
CCI CCS



CM 2

CRN 223437-10-3

CMF C9 H20 N



L27 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2006:915713 CAPLUS

DN 145:304583

TI Ionic liquid, nonaqueous electrolyte solution, and electric charging devices provided with electrolyte solution

IN Yoshida, Hiroshi; Yuyama, Kanako; Masuda, Akira

PA Nisshin Spinning Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006236829	A	20060907	JP 2005-50919	20050225
PRAI	JP 2005-50919		20050225		
OS	MARPAT 145:304583				

AB The title nonaq. ionic liquid having its m.p.  $\leq 50^\circ$  is [XR1R2R3R4]+•[RfaBF4-a]- and [XR1R2R3R4]+•[RfbBF6-b]- and [XR1R2R3R4]+•[Rf6BF6-b]- (I, II: X = N, P; R1-4 = C1-5 alkyl, R'O(CH2)n- alkoxyl, any two of R1-R4 may form a ring with X leaving  $\geq 1$  of R1-R4 to be alkoxylalkyl; R' = Me, Et; Rf = C1-4 perfluoroalkyl; n = 1-4; a = 1-4 int., b = 1-6 int.). I and II are ionic liquid having viscosity lower than that of prior-art ionic liquid having tetrafluoroborate anion or hexafluorophosphate anion and are less reactive in hydrolysis. The noble ionic liquid is applicable to elec. charging devices such as double-layer capacitors and lithium ionic batteries.

IT 834861-91-5P

RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (ionic liquid; ionic liquid, nonaq. electrolyte solution, and elec. charging devices provided with electrolyte solution)

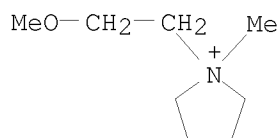
RN 834861-91-5 CAPLUS

CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 464927-75-1

CMF C8 H18 N O

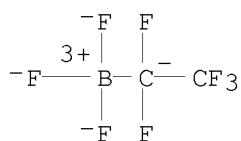


CM 2

CRN 390750-62-6

CMF C2 B F8

CCI CCS



L27 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2006:733596 CAPLUS

DN 145:191966

TI Quaternary ammonium salt, electrolyte, electrolyte solution and electrochemical device

IN Nishida, Tetsuo; Hirano, Kazutaka; Tomisaki, Megumi; Tashiro, Yasutaka; Tsurumaru, Hitoshi; Nabeshima, Akihiro; Abe, Yoshinobu; Tokuda, Hiroaki; Oka, Akinori

PA Otsuka Chemical Co., Ltd., Japan; Stella Chemifa Corporation

SO PCT Int. Appl., 97 pp.

CODEN: PIXXD2

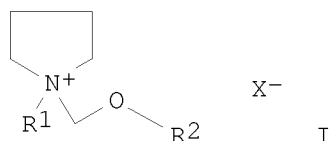
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006077894	A1	20060727	WO 2006-JP300664	20060112
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	RW:				
	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	CA 2597882	A1	20060727	CA 2006-2597882	20060112
	EP 1837333	A1	20070926	EP 2006-700847	20060112
	R:				
	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
	CN 101103009	A	20080109	CN 2006-80002212	20060112
	KR 2007094961	A	20070927	KR 2007-718400	20070810
PRAI	JP 2005-5768	A	20050112		

JP 2005-5789 A 20050112  
 JP 2005-228320 A 20050805  
 WO 2006-JP300664 W 20060112  
 OS MARPAT 145:191966  
 GI



AB Disclosed is a quaternary ammonium salt represented by the formula I (R1 = straight chain or branched alkyl group having 1-4 carbon atoms; R2 = straight chain or branched alkyl group having 1-3 carbon atoms; and X- = CF3CO2 -, CF3SO3BF3 -, ClBF3 -, AlF4 -, CF3BF3 -, C2F5BF3 -, N(SO2F)2 -, PF6 -, AsF6 - or SbF6 -).

IT 834861-90-4P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)  
 (preparation of quaternary ammonium salt for electrochem. device)

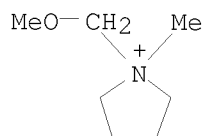
RN 834861-90-4 CAPLUS

CN Pyrrolidinium, 1-(methoxymethyl)-1-methyl-, (T-4)-  
 trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 615564-10-8

CMF C7 H16 N O

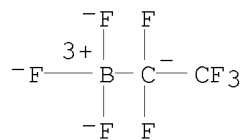


CM 2

CRN 390750-62-6

CMF C2 B F8

CCI CCS



RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2006:270718 CAPLUS

DN 144:468095

TI Cyclic quaternary ammonium ionic liquids with  
perfluoroalkyltrifluoroborates: synthesis, characterization, and  
properties

AU Zhou, Zhi-Bin; Matsumoto, Hajime; Tatsumi, Kuniaki

CS Research Institute for Ubiquitous Energy Devices, National Institute of  
Advanced Industrial Science and Technology, 1-8-31 Midorigaoka, Ikeda,  
Osaka, 563-8577, Japan

SO Chemistry--A European Journal (2006), 12(8), 2196-2212  
CODEN: CEUJED; ISSN: 0947-6539

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

OS CASREACT 144:468095

AB New cyclic quaternary ammonium salts, composed of N-R-N-  
methylpyrrolidinium, -oxazolidinium, -piperidinium, or -morpholinium  
cations (R = n-Bu, MeOCH<sub>2</sub>, MeOCH<sub>2</sub>CH<sub>2</sub>) and a perfluoroalkyltrifluoroborate  
anion ([RFBF<sub>3</sub>]<sup>-</sup>, RF = F<sub>3</sub>C, C<sub>2</sub>F<sub>5</sub>, n-C<sub>3</sub>F<sub>7</sub>, n-C<sub>4</sub>F<sub>9</sub>), were synthesized and  
characterized. Most of these salts are liqs. at room temperature. The key  
properties of these salts, namely, phase transitions, thermal stability,  
d., viscosity, conductivity, and electrochem. windows, were measured and

compared

to those of their corresponding [BF<sub>4</sub>]<sup>-</sup> and [(CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub>N]<sup>-</sup> salts. The  
structural effect on all the above properties was intensively studied in  
terms of the identity of the cation and anion, variation of the side chain  
in the cation (i.e., alkyl vs. alkyl ether), and change in the length of  
the perfluoroalkyl group (RF) in the [RFBF<sub>3</sub>]<sup>-</sup> ion. The reduction of Li<sup>+</sup> ions  
and reoxidn. of Li metal took place in pure N-butyl-N-methyl-pyrrolidinium  
pentafluoroethyltrifluoroborate as the supporting electrolyte. Some of  
these new salts show desirable properties, including low m.p.s., high  
thermal stabilities, low viscosities, high conductivities, and wide  
electrochem. windows, and may thus be potential candidates for use as  
electrolytes in high-energy storage devices. In addition, many salts are  
ionic plastic crystals.

IT 834861-86-8P 834861-90-4P 834861-91-5P

858948-62-6P 858948-66-0P 858948-68-2P

886439-15-2P 886439-16-3P 886439-24-3P

886439-28-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation, d., viscosity and thermal and electrochem. properties of  
pyrrolidinium, oxazolidinium, piperidinium or morpholinium quaternary  
ammonium ionic liqs.)

RN 834861-86-8 CAPLUS

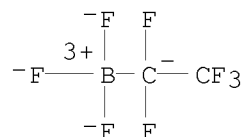
CN Pyrrolidinium, 1-butyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(  
1-) (9CI) (CA INDEX NAME)

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CMF C2 B F8

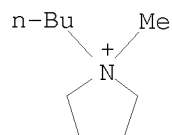
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CM 2

CRN 223437-10-3

CMF C9 H20 N



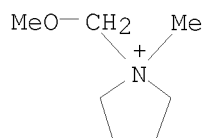
RN 834861-90-4 CAPLUS

CN Pyrrolidinium, 1-(methoxymethyl)-1-methyl-, (T-4)-  
trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 615564-10-8

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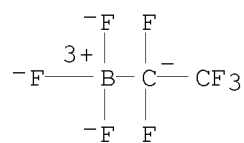


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CRN 390750-62-6

CMF C2 B F8

CCI CCS



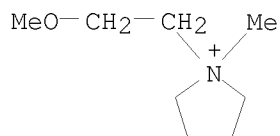
RN 834861-91-5 CAPLUS

CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

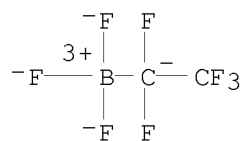
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CRN 464927-75-1

CMF C8 H18 N O

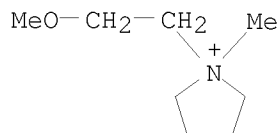


CM 2  
 CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS

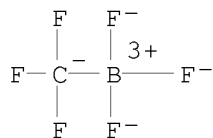


RN 858948-62-6 CAPLUS  
 CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
 trifluoro(trifluoromethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1  
 CRN 464927-75-1  
 CMF C8 H18 N O

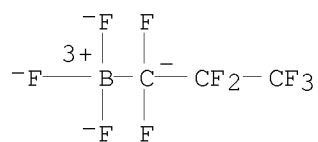


CM 2  
 CRN 44629-17-6  
 CMF C B F6  
 CCI CCS



RN 858948-66-0 CAPLUS  
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 trifluoro(heptafluoropropyl)borate(1-) (9CI) (CA INDEX NAME)

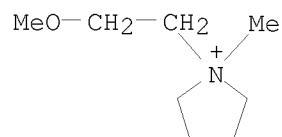
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 CMF C3 B F10  
 CCI CCS



CM 2

CRN 464927-75-1

CMF C8 H18 N O



RN 858948-68-2 CAPLUS

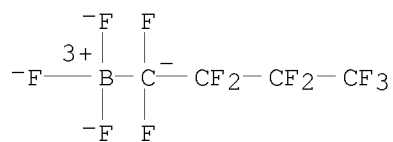
CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
trifluoro(nonafluorobutyl)borate(1-) (9CI) (CA INDEX NAME)

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CRN 658698-75-0

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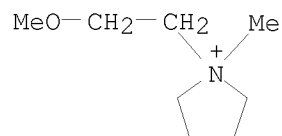
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CM 2

CRN 464927-75-1

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RN 886439-15-2 CAPLUS

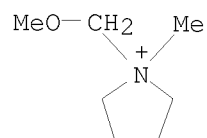
CN Pyrrolidinium, 1-(methoxymethyl)-1-methyl-, (T-4)-  
trifluoro(trifluoromethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 615564-10-8

CMF C7 H16 N O



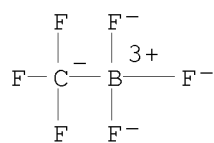


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CRN 44629-17-6

CMF C B F6

CCI CCS



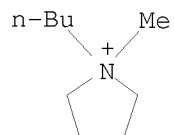
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CN Pyrrolidinium, 1-butyl-1-methyl-, (T-4)-trifluoro(trifluoromethyl)borate(1-)  
(9CI) (CA INDEX NAME)

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CRN 223437-10-3

CMF C9 H20 N

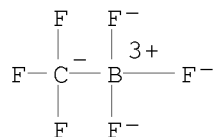


CM 2

CRN 44629-17-6

CMF C B F6

CCI CCS

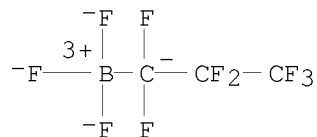


RN 886439-24-3 CAPLUS

CN Pyrrolidinium, 1-butyl-1-methyl-, (T-4)-trifluoro(heptafluoropropyl)borate  
(1-) (9CI) (CA INDEX NAME)

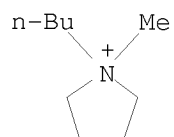
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CRN 658698-74-9  
 CMF C3 B F10  
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CM 2

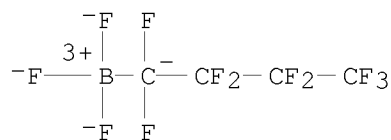
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 CMF C9 H20 N



RN 886439-28-7 CAPLUS  
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 ) (9CI) (CA INDEX NAME)

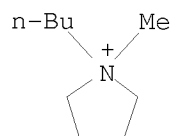
CM 1

CRN 658698-75-0  
 CMF C4 B F12  
 CCI CCS



CM 2

CRN 223437-10-3  
 CMF C9 H20 N



RE.CNT 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2005:612308 CAPLUS  
 DN 143:156299  
 TI Ionic liquid, its manufacture, and secondary lithium battery and double  
 layer capacitor comprising the liquid  
 IN Matsumoto, Hajime; Zhou, Zhi-Bin  
 PA National Institute of Advanced Industrial Science and Technology, Japan  
 SO PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005063773	A1	20050714	WO 2004-JP19323	20041224
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1698631	A1	20060906	EP 2004-807680	20041224
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
	US 2007099079	A1	20070503	US 2006-596831	20060626
PRAI	JP 2003-431700	A	20031226		
	JP 2004-19074	A	20040127		
	JP 2004-19076	A	20040127		
	JP 2004-94275	A	20040329		
	JP 2004-94293	A	20040329		
	JP 2004-285706	A	20040930		
	WO 2004-JP19323	W	20041224		

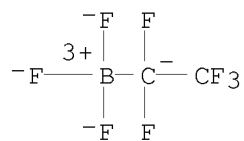
AB The ionic liquid comprises  $\geq 1$  anion selected from the group  
 consisting of  $[\text{BF}_3(\text{C}_n\text{F}_{2n+1})]^-$  ( $n = 2, 3, \text{ or } 4$ ) and  $\geq 1$  organic ammonium  
 ion. The ionic liquid is manufactured by mixing a 1st compound containing the  
 anion as  
 anion component with a 2nd compound containing the organic ammonium ion as  
 cation

component.  
 IT 834861-85-7 834861-86-8 834861-87-9  
 834861-88-0 834861-89-1 834861-90-4  
 834861-91-5 834861-92-6 834861-93-7  
 858948-62-6 858948-66-0 858948-68-2  
 858948-70-6 858948-71-7  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (compns. of organic ammonium salts for electrolytes in secondary lithium  
 batteries and double-layer capacitors)  
 RN 834861-85-7 CAPLUS  
 CN Pyrrolidinium, 1-methyl-1-propyl-, (T-4)-trifluoro(pentafluoroethyl)borate  
 (1-) (9CI) (CA INDEX NAME)

CM 1

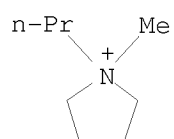
CRN 390750-62-6  
 CMF C2 B F8

CCI CCS



CM 2

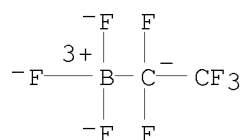
CRN 108259-90-1  
CMF C8 H18 N



RN 834861-86-8 CAPLUS  
CN Pyrrolidinium, 1-butyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

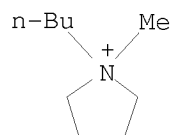
CM 1

CRN 390750-62-6  
CMF C2 B F8  
CCI CCS



CM 2

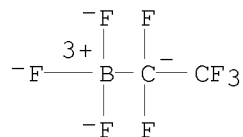
CRN 223437-10-3  
CMF C9 H20 N



RN 834861-87-9 CAPLUS  
CN Pyrrolidinium, 1-methyl-1-pentyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

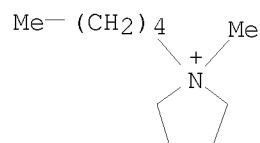
CM 1

CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

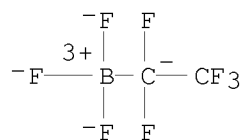
CRN 58875-50-6  
 CMF C10 H22 N



RN 834861-88-0 CAPLUS  
 CN Pyrrolidinium, 1-hexyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

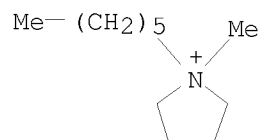
CM 1

CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

CRN 330671-30-2  
 CMF C11 H24 N



RN 834861-89-1 CAPLUS  
 CN Pyrrolidinium, 1-heptyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate

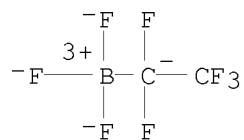
(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 390750-62-6

CMF C2 B F8

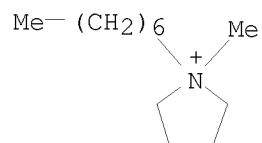
CCI CCS



CM 2

CRN 330671-32-4

CMF C12 H26 N



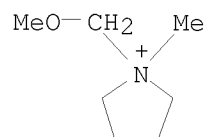
RN 834861-90-4 CAPLUS

CN Pyrrolidinium, 1-(methoxymethyl)-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 615564-10-8

CMF C7 H16 N O

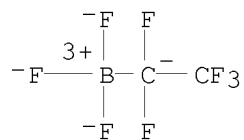


CM 2

CRN 390750-62-6

CMF C2 B F8

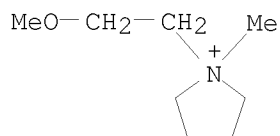
CCI CCS



RN 834861-91-5 CAPLUS  
 CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
 trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

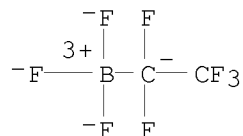
CM 1

CRN 464927-75-1  
 CMF C8 H18 N O



CM 2

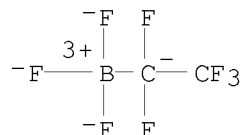
CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



RN 834861-92-6 CAPLUS  
 CN Pyrrolidinium, 1-(2-ethoxyethyl)-1-methyl-, (T-4)-  
 trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

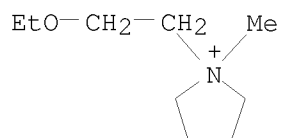
CM 1

CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

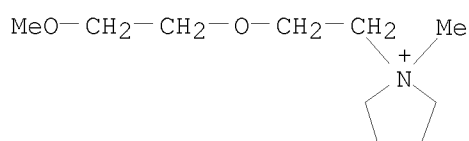
CRN 23671-55-8  
 CMF C9 H20 N O



RN 834861-93-7 CAPLUS  
 CN Pyrrolidinium, 1-[2-(2-methoxyethoxy)ethyl]-1-methyl-,  
 (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

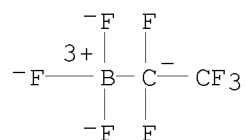
CM 1

CRN 743436-79-5  
 CMF C10 H22 N O2



CM 2

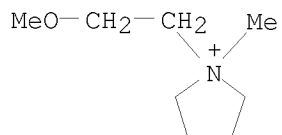
CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



RN 858948-62-6 CAPLUS  
 CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
 trifluoro(trifluoromethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 464927-75-1  
 CMF C8 H18 N O

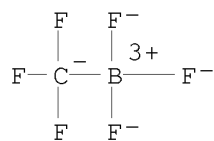


CM 2

CRN 44629-17-6  
 CMF C B F6



CCI CCS



RN 858948-66-0 CAPLUS

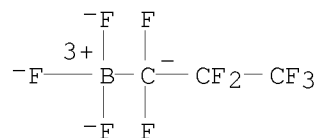
CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
trifluoro(heptafluoropropyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 658698-74-9

CMF C3 B F10

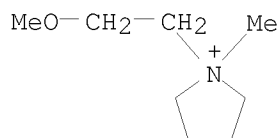
CCI CCS



CM 2

CRN 464927-75-1

CMF C8 H18 N O



RN 858948-68-2 CAPLUS

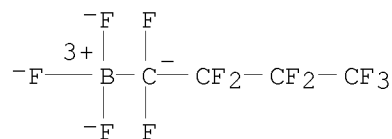
CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
trifluoro(nonafluorobutyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 658698-75-0

CMF C4 B F12

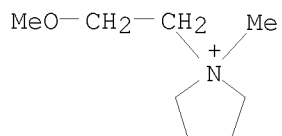
CCI CCS



CM 2

CRN 464927-75-1

CMF C8 H18 N O



RN 858948-70-6 CAPLUS

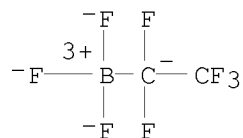
CN Pyrrolidinium, 1,1-dimethyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 390750-62-6

CMF C2 B F8

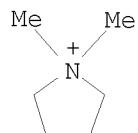
CCI CCS



CM 2

CRN 15312-12-6

CMF C6 H14 N



RN 858948-71-7 CAPLUS

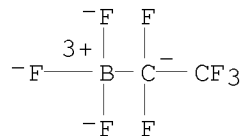
CN Pyrrolidinium, 1-ethyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 390750-62-6

CMF C2 B F8

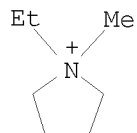
CCI CCS



CM 2

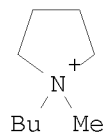
CRN 15302-90-6

CMF C7 H16 N



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2004:1121653 CAPLUS  
DN 142:176638  
TI Low-melting, low-viscous, hydrophobic ionic liquids: N-alkyl(alkyl  
ether)-N-methylpyrrolidinium perfluoroethyltrifluoroborate  
AU Zhou, Zhi-Bin; Matsumoto, Hajime; Tatsumi, Kuniaki  
CS Research Institute for Ubiquitous Energy Devices, National Institute of  
Advanced Industrial Science and Technology, Osaka, 563-8577, Japan  
SO Chemistry Letters (2004), 33(12), 1636-1637  
CODEN: CMLTAG; ISSN: 0366-7022  
PB Chemical Society of Japan  
DT Journal  
LA English  
OS CASREACT 142:176638  
GI



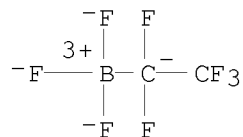
$[C_2F_5BF_3]^-$

I

AB A series of hydrophobic ionic liqs., e.g., I, comprising  
N-alkyl-N-methylpyrrolidinium and perfluoroethyltrifluoroborate were  
prepared and characterized. The  $[C_2F_5BF_3]^-$ -based salts showed lower m.ps.  
than the corresponding  $[BF_4]^-$ -based ones. Of these salts, some were liqs.  
at room temperature and show very low viscosities (37-71 cP at 25 °C),  
high ionic conductivities (3.0-6.8 mScm<sup>-1</sup>) and wide electrochem. windows.  
IT 834861-85-7P 834861-87-9P 834861-88-0P  
834861-89-1P 834861-91-5P 834861-92-6P  
834861-93-7P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and physicochem. properties of pyrrolidinium  
perfluoroethyltrifluoroborates via anion exchange of pyrrolidinium  
bromide followed by salt formation with perfluoroethyltrifluoro(hydro)b  
oron)  
RN 834861-85-7 CAPLUS  
CN Pyrrolidinium, 1-methyl-1-propyl-, (T-4)-trifluoro(pentafluoroethyl)borate  
(1-) (9CI) (CA INDEX NAME)

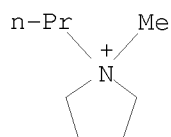
CM 1

CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

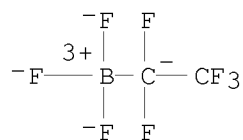
CRN 108259-90-1  
 CMF C8 H18 N



RN 834861-87-9 CAPLUS  
 CN Pyrrolidinium, 1-methyl-1-pentyl-, (T-4)-trifluoro(pentafluoroethyl)borate  
 (1-) (9CI) (CA INDEX NAME)

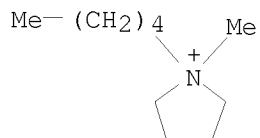
CM 1

CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

CRN 58875-50-6  
 CMF C10 H22 N



RN 834861-88-0 CAPLUS  
 CN Pyrrolidinium, 1-hexyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(

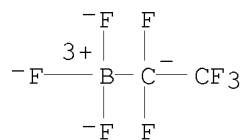
1-) (9CI) (CA INDEX NAME)

CM 1

CRN 390750-62-6

CMF C2 B F8

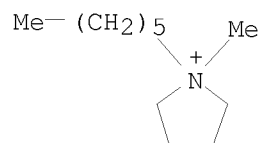
CCI CCS



CM 2

CRN 330671-30-2

CMF C11 H24 N



RN 834861-89-1 CAPLUS

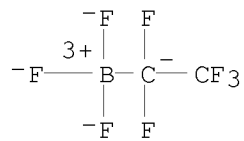
CN Pyrrolidinium, 1-heptyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate  
(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 390750-62-6

CMF C2 B F8

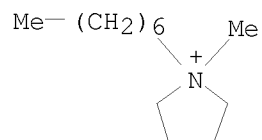
CCI CCS



CM 2

CRN 330671-32-4

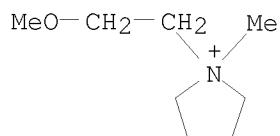
CMF C12 H26 N



RN 834861-91-5 CAPLUS  
 CN Pyrrolidinium, 1-(2-methoxyethyl)-1-methyl-, (T-4)-  
 trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

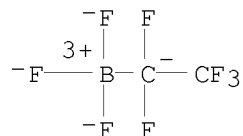
CM 1

CRN 464927-75-1  
 CMF C8 H18 N O



CM 2

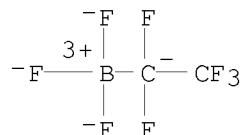
CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



RN 834861-92-6 CAPLUS  
 CN Pyrrolidinium, 1-(2-ethoxyethyl)-1-methyl-, (T-4)-  
 trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

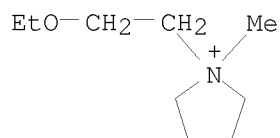
CM 1

CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

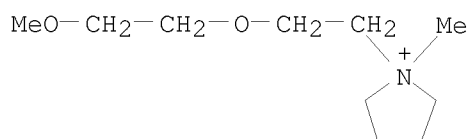
CRN 23671-55-8  
 CMF C9 H20 N O



RN 834861-93-7 CAPLUS  
 CN Pyrrolidinium, 1-[2-(2-methoxyethoxy)ethyl]-1-methyl-,  
 (T-4)-trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

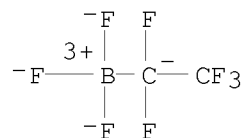
CM 1

CRN 743436-79-5  
 CMF C10 H22 N O2



CM 2

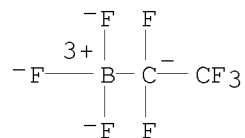
CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



IT 834861-86-8P 834861-90-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation, physicochem. properties, and electrochem. stability of  
 pyrrolidinium perfluoroethyltrifluoroborates via anion exchange of  
 pyrrolidinium bromide followed by salt formation with  
 perfluoroethyltrifluoro(hydro)boron)  
 RN 834861-86-8 CAPLUS  
 CN Pyrrolidinium, 1-butyl-1-methyl-, (T-4)-trifluoro(pentafluoroethyl)borate(  
 1-) (9CI) (CA INDEX NAME)

CM 1

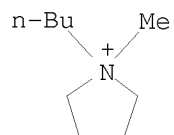
CRN 390750-62-6  
 CMF C2 B F8  
 CCI CCS



CM 2

CRN 223437-10-3

CMF C9 H20 N



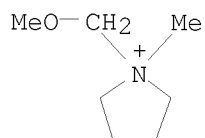
RN 834861-90-4 CAPLUS

CN Pyrrolidinium, 1-(methoxymethyl)-1-methyl-, (T-4)-  
trifluoro(pentafluoroethyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 615564-10-8

CMF C7 H16 N O

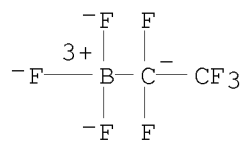


CM 2

CRN 390750-62-6

CMF C2 B F8

CCI CCS



RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT